RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: _____10/560, 918_____

Source: _____IFWP_____

Date Processed by STIC: _____12/30/2005_____

ENTERED

RAW SEQUENCE LISTING   DATE: 12/30/2005
PATENT APPLICATION: US/10/560,918   TIME: 09:44:31

Input Set : **A:\MER-142 SEQ LIST.txt**
Output Set: **N:\CRF4\12302005\J560918.raw**

```
   4 <110> APPLICANT: BAKER, Matthew
   5        WATKINS, John
   7 <120> TITLE OF INVENTION: MODIFIED HIRUDIN PROTEINS AND T-CELL
   8        EPITOPES IN HIRUDIN
  10 <130> FILE REFERENCE: MER-142
C--> 12 <140> CURRENT APPLICATION NUMBER: US/10/560,918
C--> 13 <141> CURRENT FILING DATE: 2005-12-16
  15 <150> PRIOR APPLICATION NUMBER: PCT/EP2004/006943
  16 <151> PRIOR FILING DATE: 2004-06-25
  18 <150> PRIOR APPLICATION NUMBER: EP03014332.5
  19 <151> PRIOR FILING DATE: 2003-06-26
  21 <160> NUMBER OF SEQ ID NOS: 108
  23 <170> SOFTWARE: FastSEQ for Windows Version 4.0
  25 <210> SEQ ID NO: 1
  26 <211> LENGTH: 31
  27 <212> TYPE: PRT
  28 <213> ORGANISM: hirudo medicinalis
  30 <400> SEQUENCE: 1
  31 Ala Cys Ile Leu Gly Ser Asp Gly Glu Lys Asn Gln Cys Val Thr Gly
  32 1               5                   10                  15
  33 Glu Gly Thr Pro Lys Pro Glu Ser His Asn Asp Gly Asp Phe Glu
  34              20                  25                  30
  37 <210> SEQ ID NO: 2
  38 <211> LENGTH: 65
  39 <212> TYPE: PRT
  40 <213> ORGANISM: Artificial Sequence
  42 <220> FEATURE:
  43 <223> OTHER INFORMATION: modified hirudin
W--> 45 <221> NAME/KEY: VARIANT
  46 <222> LOCATION: 13, 15, 21, 29
  47 <223> OTHER INFORMATION: X=T, L;
  48        X=T,A,H,Q,T,L;
  49        X=A,G,H,K,N,P,Q,R,V;
  50        X=A,D,E,G,H,K,N,Q,R,S,T,I;
W--> 54 <221> VARIANT
  55 <222> LOCATION: 30, 40, 47, 48
  56 <223> OTHER INFORMATION: X=A,D,E,G,H,K,N,P,Q,R,S,T,L;
  57        X=A,T,V;
  58        X=T,K;
  59        X=A,T,P
W--> 61 <221> VARIANT
  62 <222> LOCATION: 53, 56
  63 <223> OTHER INFORMATION: X=E,N,R,D;
```

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```
      64        X=H,F
W--> 66 <400> 2
W--> 67 Val Val Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Xaa Cys Xaa Cys
     68 1               5                   10                  15
W--> 69 Glu Gly Ser Val Xaa Cys Gly Gln Gly Asn Lys Cys Xaa Xaa Gly Ser
     70              20                  25                  30
W--> 71 Asp Gly Glu Lys Asn Gln Cys Xaa Thr Gly Glu Gly Thr Pro Xaa Xaa
     72          35                  40                  45
W--> 73 Glu Ser His Asn Xaa Gly Asp Xaa Glu Glu Ile Pro Glu Glu Tyr Leu
     74      50                  55                  60
     75 Gln
     76 65
     79 <210> SEQ ID NO: 3
     80 <211> LENGTH: 65
     81 <212> TYPE: PRT
     82 <213> ORGANISM: hirudo medicinalis
     84 <400> SEQUENCE: 3
     85 Val Val Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
     86 1               5                   10                  15
     87 Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Ile Leu Gly Ser
     88              20                  25                  30
     89 Asp Gly Glu Lys Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro
     90          35                  40                  45
     91 Glu Ser His Asn Asp Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
     92      50                  55                  60
     93 Gln
     94 65
     97 <210> SEQ ID NO: 4
     98 <211> LENGTH: 65
     99 <212> TYPE: PRT
    100 <213> ORGANISM: Artificial Sequence
    102 <220> FEATURE:
    103 <223> OTHER INFORMATION: modified hirudin
    105 <400> SEQUENCE: 4
    106 Val Val Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
    107 1               5                   10                  15
    108 Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Ala Ala Gly Ser
    109              20                  25                  30
    110 Asp Gly Glu Lys Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro
    111          35                  40                  45
    112 Glu Ser His Asn Asp Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
    113      50                  55                  60
    114 Gln
    115 65
    118 <210> SEQ ID NO: 5
    119 <211> LENGTH: 65
    120 <212> TYPE: PRT
    121 <213> ORGANISM: Artificial Sequence
    123 <220> FEATURE:
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```
124 <223> OTHER INFORMATION: modified hirudin
126 <400> SEQUENCE: 5
127 Val Val Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
128 1               5                   10                  15
129 Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Arg His Gly Ser
130             20                  25                  30
131 Asp Gly Glu Lys Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro
132         35                  40                  45
133 Glu Ser His Asn Asp Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
134     50                  55                  60
135 Gln
136 65
139 <210> SEQ ID NO: 6
140 <211> LENGTH: 65
141 <212> TYPE: PRT
142 <213> ORGANISM: Artificial Sequence
144 <220> FEATURE:
145 <223> OTHER INFORMATION: modified hirudin
147 <400> SEQUENCE: 6
148 Val Val Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
149 1               5                   10                  15
150 Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Glu Lys Gly Ser
151             20                  25                  30
152 Asp Gly Glu Lys Asn Gln Cys Ala Thr Gly Glu Gly Thr Pro Lys Pro
153         35                  40                  45
154 Glu Ser His Asn Asp Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
155     50                  55                  60
156 Gln
157 65
160 <210> SEQ ID NO: 7
161 <211> LENGTH: 65
162 <212> TYPE: PRT
163 <213> ORGANISM: Artificial Sequence
165 <220> FEATURE:
166 <223> OTHER INFORMATION: modified hirudin
168 <400> SEQUENCE: 7
169 Val Val Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
170 1               5                   10                  15
171 Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Glu Lys Gly Ser
172             20                  25                  30
173 Asp Gly Glu Lys Asn Gln Cys Thr Thr Gly Glu Gly Thr Pro Lys Pro
174         35                  40                  45
175 Glu Ser His Asn Asp Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
176     50                  55                  60
177 Gln
178 65
181 <210> SEQ ID NO: 8
182 <211> LENGTH: 65
183 <212> TYPE: PRT
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RAW SEQUENCE LISTING   DATE: 12/30/2005
PATENT APPLICATION: US/10/560,918   TIME: 09:44:31

Input Set : A:\MER-142 SEQ LIST.txt
Output Set: N:\CRF4\12302005\J560918.raw

```
.184 <213> ORGANISM: Artificial Sequence
 186 <220> FEATURE:
 187 <223> OTHER INFORMATION: modified hirudin
 189 <400> SEQUENCE: 8
 190 Val Val Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
 191 1               5                   10                  15
 192 Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Glu Lys Gly Ser
 193             20                  25                  30
 194 Asp Gly Glu Lys Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro
 195         35                  40                  45
 196 Glu Ser His Asn Glu Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
 197     50                  55                  60
 198 Gln
 199 65
 202 <210> SEQ ID NO: 9
 203 <211> LENGTH: 65
 204 <212> TYPE: PRT
 205 <213> ORGANISM: Artificial Sequence
 207 <220> FEATURE:
 208 <223> OTHER INFORMATION: modified hirudin
 210 <400> SEQUENCE: 9
 211 Val Val Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
 212 1               5                   10                  15
 213 Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Glu Lys Gly Ser
 214             20                  25                  30
 215 Asp Gly Glu Lys Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro
 216         35                  40                  45
 217 Glu Ser His Asn Asn Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
 218     50                  55                  60
 219 Gln
 220 65
 223 <210> SEQ ID NO: 10
 224 <211> LENGTH: 65
 225 <212> TYPE: PRT
 226 <213> ORGANISM: Artificial Sequence
 228 <220> FEATURE:
 229 <223> OTHER INFORMATION: modified hirudin
 231 <400> SEQUENCE: 10
 232 Val Val Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
 233 1               5                   10                  15
 234 Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Arg Lys Gly Ser
 235             20                  25                  30
 236 Asp Gly Glu Lys Asn Gln Cys Ala Thr Gly Glu Gly Thr Pro Lys Pro
 237         35                  40                  45
 238 Glu Ser His Asn Asp Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
 239     50                  55                  60
 240 Gln
 241 65
 244 <210> SEQ ID NO: 11
```

```
245 <211> LENGTH: 65
246 <212> TYPE: PRT
247 <213> ORGANISM: Artificial Sequence
249 <220> FEATURE:
250 <223> OTHER INFORMATION: modified hirudin
252 <400> SEQUENCE: 11
253 Val Val Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
254 1               5                   10                  15
255 Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Arg Lys Gly Ser
256             20                  25                  30
257 Asp Gly Glu Lys Asn Gln Cys Thr Thr Gly Glu Gly Thr Pro Lys Pro
258         35                  40                  45
259 Glu Ser His Asn Asp Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
260     50                  55                  60
261 Gln
262 65
265 <210> SEQ ID NO: 12
266 <211> LENGTH: 65
267 <212> TYPE: PRT
268 <213> ORGANISM: Artificial Sequence
270 <220> FEATURE:
271 <223> OTHER INFORMATION: modified hirudin
273 <400> SEQUENCE: 12
274 Val Val Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
275 1               5                   10                  15
276 Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Arg Lys Gly Ser
277             20                  25                  30
278 Asp Gly Glu Lys Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro
279         35                  40                  45
280 Glu Ser His Asn Glu Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
281     50                  55                  60
282 Gln
283 65
286 <210> SEQ ID NO: 13
287 <211> LENGTH: 65
288 <212> TYPE: PRT
289 <213> ORGANISM: Artificial Sequence
291 <220> FEATURE:
292 <223> OTHER INFORMATION: modified hirudin
294 <400> SEQUENCE: 13
295 Val Val Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
296 1               5                   10                  15
297 Glu Gly Ser Val Val Cys Gly Gln Gly Asn Lys Cys Arg Lys Gly Ser
298             20                  25                  30
299 Asp Gly Glu Lys Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro
300         35                  40                  45
301 Glu Ser His Asn Asn Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
302     50                  55                  60
303 Gln
```

RAW SEQUENCE LISTING ERROR SUMMARY   DATE: 12/30/2005
PATENT APPLICATION: **US/10/560,918**   TIME: 09:44:32

Input Set : **A:\MER-142 SEQ LIST.txt**
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Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:2; Xaa Pos. 13,15,21,29,30,40,47,48,53,56

VERIFICATION SUMMARY   DATE: 12/30/2005
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```
L:12 M:270 C: Current Application Number differs, Replaced Current Application Number
L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:45 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:54 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:2
L:61 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:2
L:66 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:2
L:67 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0
L:69 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:16
L:71 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:32
L:73 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:48
```